[*Clin. Exp. Allergy*, **28**, 497-503 (1998)] [Lab. of Pharmacology]

Mite Antigen-induced IL-4 and IL-13 Production by Basophils Derived from Atopic Asthma Patients.

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We investigated the production of IL-4 and IL-13 from mite-sensitive atopic asthmatic basophils in response to mite antigen. Mite-sensitive asthmatic basophils produced IL-4 and IL-13 when stimulated with mite antigens. Mite-induced IL-4 production peaked at 6 hours after the stimulation, whereas IL-13 production continued up to 24 hours. The higher the concentration of mite-specific IgE but not total IgE in the serum, the more IL-4 and IL-13 were produced. The production was significantly suppressed by theophylline and dexamethasone. The inhibitory effect of dexamethasone and theophylline on allergic inflammation may be due to the inhibition of IL-4 and IL-13 production not only by T cells but also by basophils.

[*Life Sci.*, **63**, PL145-150 (1998)] [Lab. of Pharmacology]

Characterization of Antihistamines Using Biphasic Cutaneous Reaction in BALB/c Mice.

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Effects of 11 histamine H1 receptor antagonists on IgE-mediated biphasic cutaneous reaction in mice were examined. The immediate phase reaction (IPR) was significantly inhibited by all antihistamines examined. The later phase reaction (LPR) was inhibited by chlorpheniramine, oxatomide, ketotifen, mequitazine, emedastine, terfenadine and azelastine. Present results indicate that H1 receptor activation is involved in the IPR of the biphasic cutaneous reaction, and that the blockade of H1 receptors at IPR does not contribute to the attenuation of following LPR.

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Antiallergic Action of Betotastine Besilate (TAU-284) in Animal Models: A Comparison with Ketotifen.

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The effects of betotastine besilate (betotastine, TAU-284), on cutaneous reactions in rats and asthmatic responses in giunea pigs were examined. Betotastine inhibited both passive cutaneous anaphylaxis and histamine-induced cutaneous reaction. Betotastine significantly inhibited antigen-induced bronchoconstriction in passively sensitized guinea pigs. In actively sensitized guinea pigs, betotastine inhibited the immediate and late phase increase in airway resistance. PAF-induced accumulation of eosinophils in the bronchoalveolar cavity in guinea pigs was also inhibited by betotastine. These results indicate that betotastine could be useful in the treatment of allergic disease such as bronchial asthma.

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The Effects of Anti-asthma Drugs on Mediator Release from Cultured Human Mast Cells.

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We examined the effects of anti-asthma drugs on the release of histamine, sulfidoleukotrienes (LTs) and prostaglandin D2 (PGD2) from the cultured human mast cells. The cultured mast cells released histamine, LTs and PGD2 upon stimulation with anti-IgE. Disodium cromoglycate and azelastine significantly inhibited the release of these mediators. Isoproterenol, salbutamol and clenbuterol inhibited the mediator release, but theophylline, rolipram, and cilostazol had no significant effect. BAYx1005 inhibited the LTs release, whereas indomethacin and NS-398 inhibited PGD2 release. These results suggest that cultured human mast cells are useful for the analysis of function and pharmacological profiles of lung mast cells.